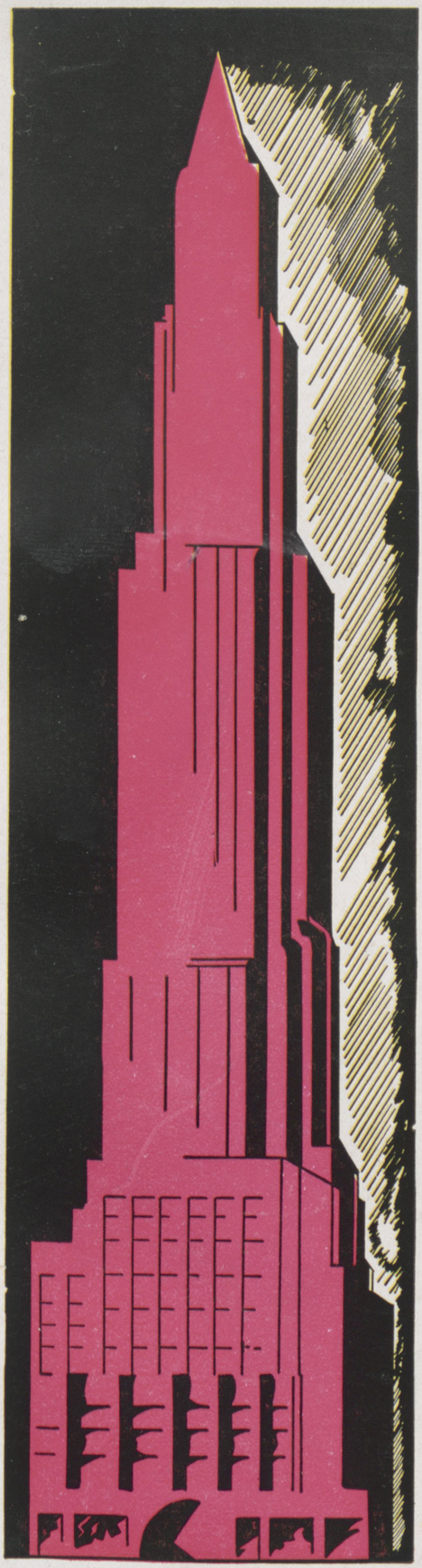
Spring 3-1934

Volume 43 - Issue 6 - March, 1934

Rose Technic Staff
Rose-Hulman Institute of Technology



ROSE TECH

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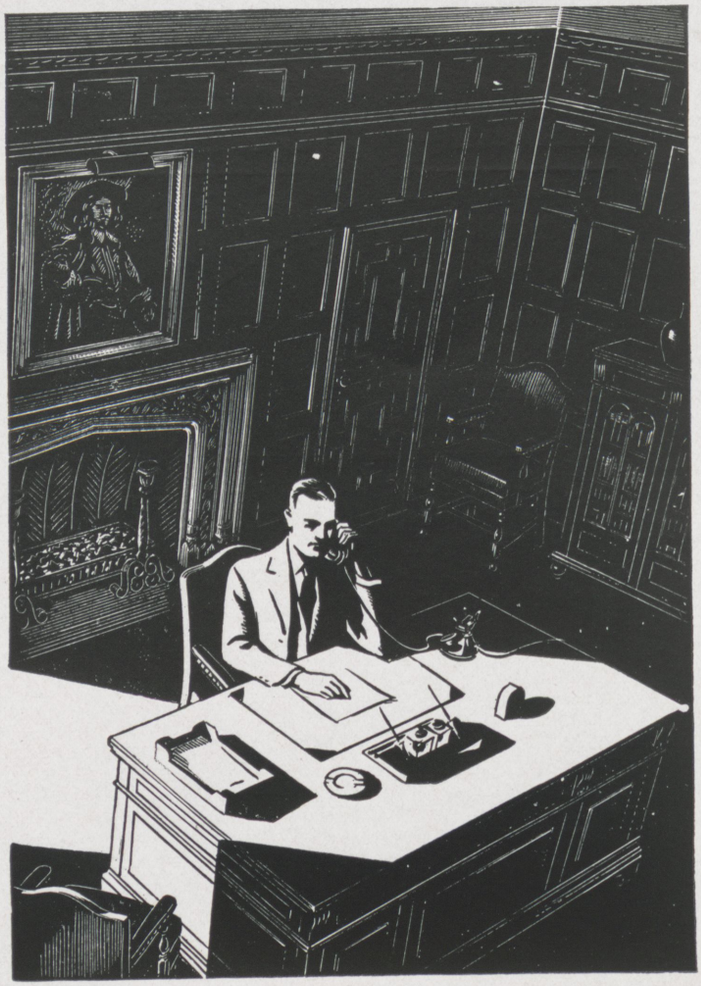
Remember the Rose Show
March 8-9-10

Member Engineering College Magazines Associated

ROSE POLYTECHNIC INSTITUTE, TERRE HAUTE, INDIANA

Rose Show Number

MARCH, 1934
Vol. XLIII » Number 6



In five places at once —*by telephone*

Conference telephone service—a new telephone convenience—enables a number of people far apart to talk together as freely as though gathered around a table.

This fosters quicker interchange of ideas in business—saves time and money—expedites decisions. For example: an executive wishes to discuss plans with his district managers. His telephone is connected *simultaneously* with each of theirs—all can talk, all hear everything that is said!

Through constantly developing new uses, Bell System service grows more and more valuable.

BELL TELEPHONE SYSTEM

WHY NOT SAY "HELLO" TO MOTHER AND DAD?
—RATES ARE LOWEST AFTER 8:30 P. M.

Surveying This Issue

THE frontispiece shows an excellent close-up view of the main building.

ON page 3 Mr. Hess extends a cordial welcome to everyone attending the Show. We welcome you.

A FEW years ago Chemical and Metallurgical Engineering offered an award to the chemical engineering industry which made the outstanding progress in this field. Mr. Walker describes the progress made by the recipient of this award. This article won second prize in the *Technic* contest.

THE Indianapolis Bell Telephone Company is now completing the development of their expansion program. In doing this it was necessary to move one of the nine story office buildings. Mr. McEowen describes how this was done. This article was awarded the first prize in the *Technic* contest

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THE use of color printing in the past few years has been very great. In an article entitled "Color Printing as an Art," Mr. Hager describes how this fascinating work is done.

THE ROSE TECHNIC

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Tech Engineering News
Pennsylvania Triangle
Wisconsin Engineer
Oregon State Technical Record

JAMES G. BROWN, *General Manager*
JOHN J. HAGER, *Editor* J. ROBERT MOTZ, *Business Manager*

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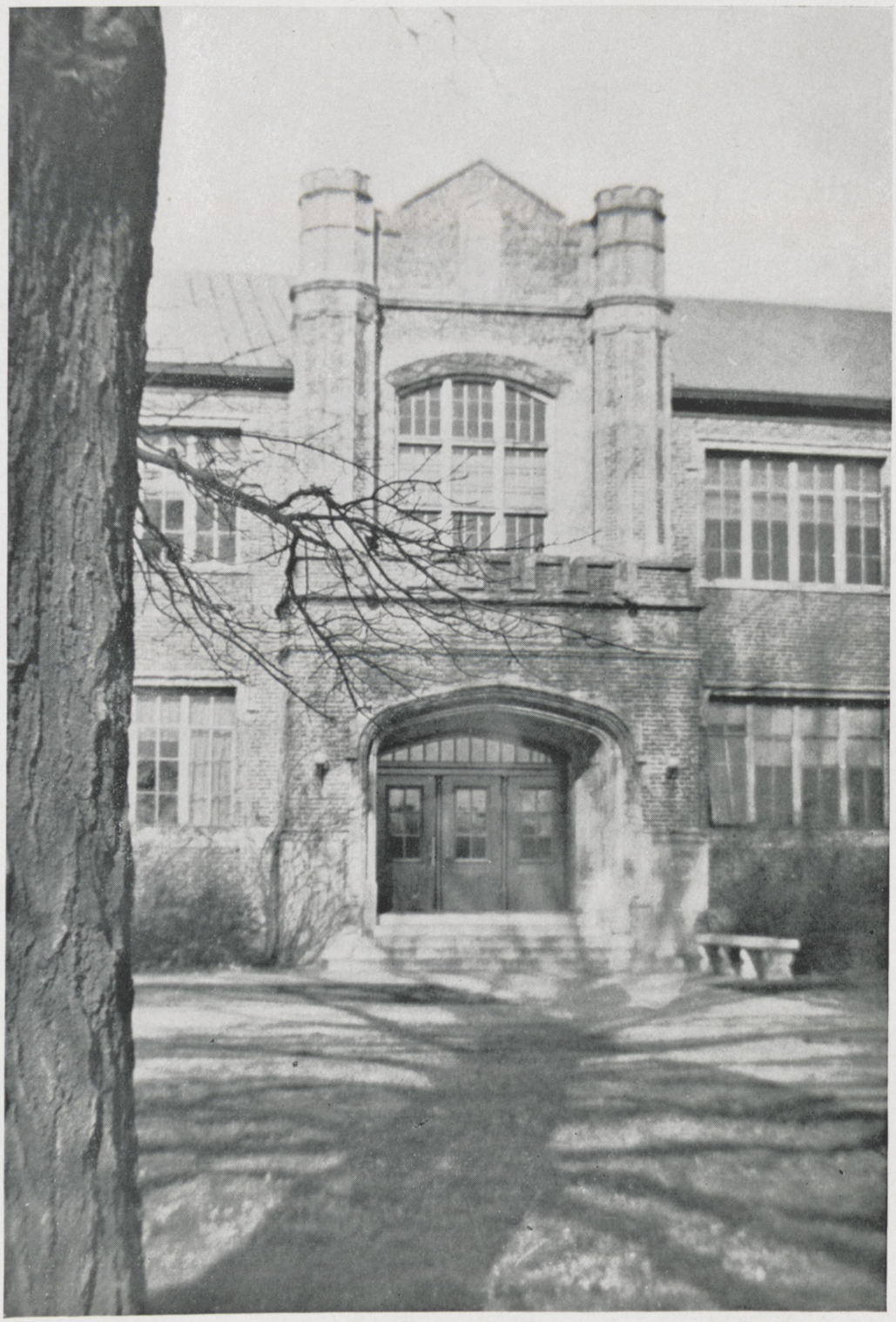
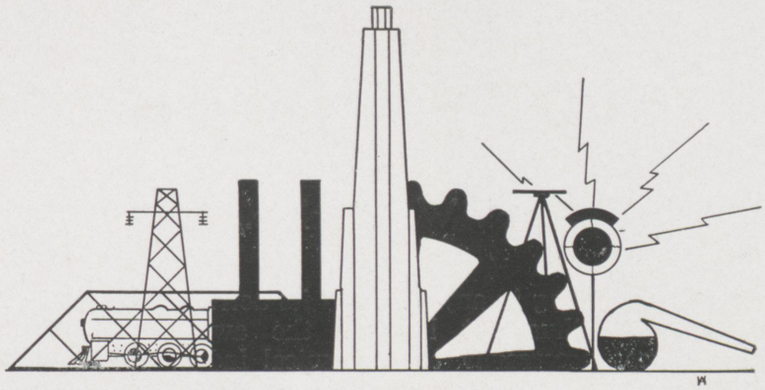


The Main Building



THE ROSE TECHNIC

THE TECHNICAL JOURNAL OF THE ROSE POLYTECHNIC INSTITUTE

Volume XLIII MARCH, 1934 Number 6

Welcome to The Rose Show!

Arthur W. Hess, c., '35

We are about to present the fourth of the biennial Rose shows. Men of Rose are proud of the enviable record set up by the past three shows and we are keenly aware that we will encounter great difficulty in producing a fourth show better than the first three. However, that is our aim and you are to be the judge of our marksmanship. We have built and arranged the exhibits of the Show, but its ultimate success does not depend entirely upon our ability to present scientific exhibits. If our exhibits are not both pleasing and educational to our audience, the show cannot be called a success.

In the past it has been the custom to present the products of various commercial enterprises as well as original exhibits prepared by students. In the preshow discussions of this year, it was decided to make this a true Rose Show; that is, all exhibits will be built and presented by Rose men. Furthermore, we are attempting to display only those things about which we are studying in our daily classes. In producing such a show we have a two-fold purpose. First, we desire to give the visitors a better idea of Rose and what Rose is doing. Second, we feel that the student body will derive more benefit from the work done on the Show if it parallels their class work.

The Show will, in reality, be made up of several shows, each one arranged by a different group. Each of the four engineering departments, namely, chemical, civil, electrical, and mechanical is presenting a group of exhibits pertaining to its line of work. In addition to these, the military, drawing, and physics departments are displaying the results of the work done in their respective groups. Several of the Rose clubs are also showing the products of their endeavors. At the present writing little is known concerning the exhibits themselves. Those of the chemicals and electricals are sure to be spectacular, amazing, and practical. The mechanicals add their usual amusing devices originated by the inimitable Professor Lucifer Butts to their otherwise practical and educational display. The civils display working scale models of practical applications of knowledge as conceived by the civil engineer. A section of No-man's land has been constructed full scale by the military department. But why continue? The Show is going on. It would take as long to describe it effectively as to see it, so we bid you welcome to the fourth Rose Show. We hope you enjoy seeing it as much as we enjoy presenting it, so again we bid you one and all, WELCOME.

History Makers

Joseph Walker, ch, e., '36

HISTORY has recorded many incidents of little importance, perhaps, but these incidets are few in comparison with many, many, major, startling and interesting feats of the past. "Come one, come all" it is sometimes said; and so it is with history; history is a record of what man has done, irregardless of its importance. Great battles, political successes and failures, scientific and engineering achievements, etc—all are included and written down forever in the pages of this gigantic scope called history.

"When we build, let us think that we build forever"—a mighty thoughtful axiom, very simply and wisely put to words by that English author, John Ruskin; and when we build forever, that is history. I want to refer you to the truly startling and wonderful, history-making progress made in recent years by the Carbide and Carbon Chemicals Corporation of New York, New York.

In honor and in tribute to this corporation for the extensive advances in a field practically unknown, the Chemical and Metallurgical Engineering Magazine has taken it solely upon itself to make known to the entire engineering world this unprecedented progress by bestowing upon this Carbide Corporation the first major award ever to be presented to a company, instead of an individual, in recognition of its group effort and attainment.

Award for Greatest Achievement

By means of nation wide advertisement this magazine announced that an award (a large bronze tablet) would be given to that company in the process industries which through the effective use of chemical engineering in any phase of its activity (thus not limiting the award necessarily to a chemical industry) has contributed the most to the industry and profession since January, 1930. Sensing this would be far from a simple task, and feeling incapable itself of rendering such a verdict, the magazine picked a committee of ten of the most select, distinguished, and prominent men in today's chemical engineering world to make

the desision. Accordingly the so-called "depression achievements" of more than twenty major companies were carefully studied by these conscientious, notable men; and, after much weighty deliberation and due consideration for each company, it was finally concluded that the highest rating should go to the Carbide and Carbon Chemical Corporation. It was not only an outstanding honor to receive an award of this sort which exemplified their great work, but it was also an indirect stimulant for increased individual and cooperative effort in every American industry.

But wait, why was this company so elevated in perference to all others? What has it done to merit such an ovation? Let us see.

Synthetic Aliphatics Developed

The Carbide Corporation's great achievement was the unparalelled development of synthetic aliphatics, which today are a most significant part of American chemical industry, are defined, generally speaking, as mixtures of the aliphatic compounds, which include not only the fatty acids and derivatives of the paraffin hydrocarbons but also unsaturated compounds, such as the ethylene and acetlylene tricate, and useful compounds. Now let us see how this achievement was made possible by studying a brief resume of the trials and tribulations of this corporation from its very beginning.

From the perserverant efforts of the well-known Dr. George O. Curme, Jr., who in the days before the great World War conducted his purely organic research at the Mellon Institute, seemed to rise to added incentive for the Carbide and Carbon Chemicals Corporation, when it was organized in 1920, not only to synthesize aliphatic compounds but also to continue Dr. Curme's work; with this in view a corps of some o fthe most intelligent and ambitious chemical engineers was drawn into this then infamous organization. From the very first there seemed to be two questions confronting them: (1) What can we make from these aliphatic compounds? (2) What can we sell, if we should make it? Truly sensible questions all right, were they not? But not enough to retard their plans; let us cross the bridges when we get to them, they thought. They did not sit and ponder over the issue as perhaps a child would puzzle over a new toy; they acted; they delved right their mighty task. Here certainly was a time and place

where individual ingenuity would come to the force! And a true test, indeed! During the decade that followed there were hundreds, yes thousands, of experiments and thousands of failures, but success here and there made the issue seem all worth while; the results of those ten years of hard, nerve-wrecking work can be summarized merely by the twelve major compounds which they were marketing in 1929. Strange, is iit not, that ten years labor can be represented by twelve words? However, those twelve words represent twelve entirely new products, twelve strangely interesting products, and, last but not least, twelve immensely useful products. Since space will not permit further comment, let us be sufficed by looking at the names of these curious synthetic aliphatic compounds; they are as folows:

Cellosolve
Cellosolve Acetate
Butyl Cellosolve
Methyl Cellosolve
Ethylene Glycol
Diethylene Glycol
Carbitrol
Butyl Carbitrol
Ethylene Chlorhydrin
Ethylene Dichloride
Dichlor Ethyl Ether
Triethanolamine

However, the main reason for the award was for achievement since January, 1930; here is what they did in that time. The experience those men gained and the knowledge they learned was so instrumental in their work that, whereas it took them ten years to produce twelve compounds, they yielded forty-eight new ones in four years; four times as many compounds in less than half the time it took them to make twelve. What a success! What an achievement!

Since merely cataloging these compounds is not so interesting, perhaps, let us look, without going into extensive details, into the more interesting side which includes a consideration of how they came into being, the service they render to other industries, and the function which they serve. We will look over three of their

major, pioneering successes and also see how the corporation was directly responsible for the large scale production of another important compound. (Space again will not permit us to look at a more thorough investigation of the corporation's activities.)

America has long had at its disposal, (1) acetone (2) ethyl alcohol and (3) methanol, but none of these products were made in America by synthetic methods until recently. With the exception of methanol the Carbide Corporation has pioneered in the synthetic production of the two other important compounds. The major motive in synthetic development by the Carbide Corporation was to provide a complete line of organic solvents for the aliphatic series thus assuring the opportunity to render full and complete service to suctomer industrites. In some cases the result was not only new and superior supplies but also these new supplies at much lower prices.

Acetone Used

Acetone, for many years a product of destructive distillation of calcium acetate, is utilized on an exceedingly large scale as an absorbent for acetylene by another Carbide subsidiary; however, due to either a high price or a short supply of acetate from wood distillation, there were large, abrupt changes in the market price of acetone. Fermentation supplies were offered with a like irregularity; the result was a burden on the purchaser that was both very great and annoying. The question confronting those producers of appreciable quantities of acetone was simply this: "Cannot acetone be synthesized from some of the available hydro-carbon raw materials so that we may at least be assured of a stable price—perhaps even a materially lower price than the average of the past?" The Carbide Corporation set out to answer this two part question and its engineers returned an affirmative verdict; their efficient men did it by synthetic processes.

In all the world today there are perhaps only two plants making ethyl alcohol by direct synthetic methods. One is a tiny plant operating in northern France; the other is the Carbide and Carbon Chemicals' plant at South Charleston, which is capable of producing approximately 10% of the country's requirements of

ethyl alcohol. It produces this product by a process never before used o na commercial scale in the [illegible] on a commercial scale in the [illegible]ion: the product is of outstanding purity and is reputed to be of relatively low cost when compared with fermentation ethyl alcohol made from cheap molasses. The manufacture of synthetic ethyl alcohol was a sensible and logical part of the South Charleston development as a means for utilization of the tremendously large quantities of ethylene which could be made at a relatively low cost in the processes of hydrocarbon cracking that is practiced there. The pioneering object, which was very successful, of this South Charleston enterprise was threefold: (1) A supply of ethyl alcohol for main corporation itself (2) A full line of solvents for the many, many consumers, and (3) A utilization of the hydrocarbons being made as the basic starting material for the entire South Charleston field. Thus another example of the worthiness of their corporation's great work.

Methanol Synthesis

Synthesis of methanol from carbon monoxide and hydrogen was not first done in America by the Carbide Corporation; nevertheless it was the first to utilize as its raw material a by-product furnace gas, essentially pure carbon monoxide from the furnaces of an affiliated company; part of this carbon monoxide by catalyzed reaction with steam furnished hydrogen for the mixture to be synthesized; the by-product carbon dioxide became a major source of dry ice for the solid carbon dioxide industry. The new synthetic methanol now dominates the United States market by supplying over 80% of the total requirement for reagents, solvents, anti-freezes, and other industrial uses. Without is public demand would be far from sufficed as wood distillation has proved greatly inadequate and far less pure. Although not pioneers in the methanol development, the Carbide Corporation did take an interesting part in its unfolding. Realizing, when an abrupt change in business conditions occurred affecting the future of the project, that it would be necessary to jump from small scale production to plant construction, they immediately decided it could be done; the management appropriated the necessary funds, authorized immediate construction, and demanded their sales force to get busy and create a customer clientele. What an initial step to take! What weighty conclusions! But it was successful and hence a remarkable instance of the versatility of this ever advancing and far sighted corporation.

And now, in conclusion, let us view as briefly as possible, their most recent offering. This compound was first experimented with regarding the possibilities of using it as a substitute for ethyl alcohol in the production of flavors, extracts, essences, and so forth; it was christened "Flavorol." It seemed, from all outside indications, to be an excellent solvent, but it had to be carefully examined before it was marketed; competent toxicologists and physiological chemists were called in for this analysis; the results, though pleasing, must have been slightly shocking to the management. The product was such a complete solvent that it dissolved material from the stomach and intestinal linings! Of course, on attempt was ever made to market it for its previously planned purpose; it was tried successfully in other fields. And today, under its new name "Cellosolve," it is the most potent and widely used of the cellulose nitrate solvents, a necessity for modern plastic making in many of its subdivisions. Research, seemingly heretofore unsuccessful, by more thorough treatment had become a tremendous success!

And now the curtain falls on this incomplete treatise on the forerunners of an industry destined to be one of the most eminent and promising of them all—the synthetic aliphatic chemicals industry.

Moving The Indianapolis Telephone Building

Albert V. McEowen, c., '35

THE Indiana Bell Telephone Company is now completing a development in Indianapolis which involved a notable feat of engineering. In their expansion program a new building was desired to house the equipment needed to provide for the increasing demands for service, the existing building being so constructed that additional stories could not be added to it. It was decided to develop the block bounded by New York, Meridian, Miami, and Pierson Streets which was occupied at the time by the eight story Telephone Building, the Lincoln Riley Building, and other minor structures; the two mentioned housing most of the equipment in use at that time. The removal of these two buildings would have involved the transfer of equipment and the demolition of the structures at an expense of about four million dollars, which was considered excessive. It was decided to leave the Lincoln Riley Building in its original position on the back cor-

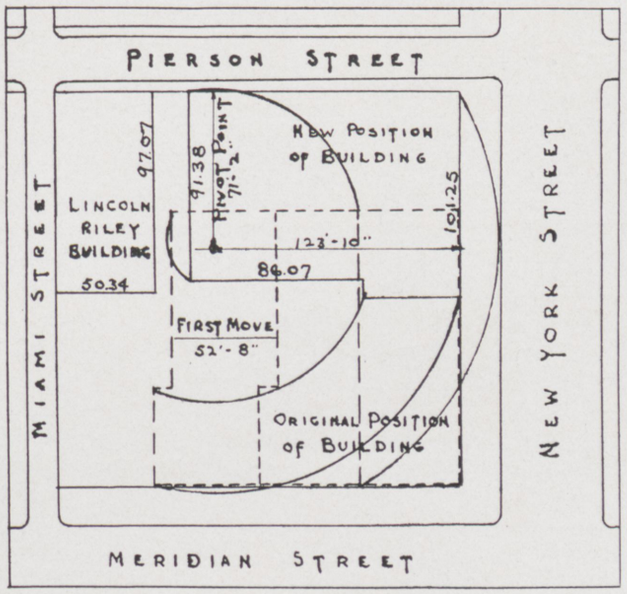
ner of the lot, move the main building to the back and construct a new building on the front half of the lot.

This brought quite a problem to view. The main building housed the administrative offices, toll switch-boards, and other apparatus for long distance service in Indianapolis. It faced east, a steel frame building, 101'x135', nine stories high, with terra-cotta arch floors and brick walls, constructed twenty-five years previously. It was necessary to place this building in its new location on the north-west corner of the lot facing north as shown in the plot plan which involved moving the structure south and turning it through 90 degrees into its new position.

In planning the operation the method of turning the building was quite important. The path of movement was planned and studied carefully to secre the most economical distance, and cardboard models were made to test the ideas brought forward. Another problem considered before beginning action was the type of roller to be used, steel balls and straight rollers being tested at Columbia University to determine the one which would give best results. The final method adopted utilized straight rollers operating on steel plates supported by steel rails, wood ties, and a final concrete mat laid directly on the soil. The path selected required a straight movement of fifty-two feet southward and a rotary movement of 90 degrees about a pivot point determined so that the building would end its rotary motion in the final desired location. This plan required the lifting of the building once to change the position of the rollers to give the desired rotary motion.

Preparation for Moving

The block was cleared of all buildings except the Lincoln Riley Building in the southwest corner, and all material within clearance lines was excavated to 21' below the finished basement floor level. The earth walls were retained by deep-arch-web steel sheeting driven to stand so that no bracing was required. The Lincoln Riley Building was underpinned along the north and east sides with a concrete wall. A six inch working mat of reinforced concrete was laid on the entire area travelled over by the building. The boiler room and elevator pits of the old building were filled with 10" concrete walls, 7' on centers, the spaces between being filled with compacted sand, and the working mat over this section was made 13" thick to carry the required load. The mat over the low portions of the new basement was thickened and supported by



PLOT PLAN

12"x12" timbers set on end. After finishing the concrete mat carefuly, 6"x8" timbers were laid flat on 16" centers and over these a system of 85 pound rails, 9" on centers, was laid, with special care that the rails paralleled the direction of movement as much as possible. At no time were they allowed at any angle greater than 45 degrees with the rollers.

The extra steel-work required was designed for four rolling surfaces at each column. Pairs of I-beam sections were riveted vertically to the column flanges to take the entire column load. These sections bore on the webs of a pair of needle beams, 28" I-beams, which were supported on two pairs of 20" I-beam girders extending continuously in the east and west direction. The 28" needle beams extended beyond the girder beams to allow a pair of jacks at each end. The needle beams were braced by diaphragms at the jacking points and the 20" girders by stiffeners bearing against the lower flanges. Twelve inch channels were used to stiffen the needle beams under adjacent columns so that the structure was well braced in a north and south direction. Diagonal cross bracing of single and double angles was used in each panel to prevent any undesirable movement of the building or columns.

The work was so planned that it was not necessary to raise the building more than 1/8" to 1/4" to remove column bases and place the shoes and rollers. The columns were raised progressively in groups of four to six with 100 ton ratchet screw jacks. Very few plaster cracks were to be found, indicating very little distortion of the building frame. A careful check was made as the lifting proceeded to see how the building was affected and the observations made were very satisfactory.

The first movement of the building, fifty-two feet southward, was made in four days by eighteen 100 ton ratchet screw-jacks distributed along the north face of the building. The men operating the jacks were instructed to take a certain number of strokes when the foreman blew a whistle, so the movement of the building was uniform. When the building reached its most southerly position it was lifted and the rollers were reset for the circular motion. The pivot point was marked and a plumb bob was hung from the corresponding point on the building frame so that it could be kept in its proper position at all times. The path of the outer corners of the building were also marked and checked as the moving progressed, making it

easy to keep the building on its correct path. Radial lines from the pivot point were marked to give the men some guide as to the position of the rollers. Due to these precautions, the building did not vary more than about an inch from its path at any time and its final position was only 1/16″ out of position. The rotary movement was accomplished by the eighteen 100-ton jacks and an additional cable pulling rig attached to the steel-work of the building. Two sets of six part blocks were used with ¾″ cable leads attached to a donkey engine. A pull of six tons on each lead line at the engine put a pull of about 72 tons on the building and aided greatly in the movement.

The building was landed much in the same manner as it was raised, five or six columns being jacked up, the shoes and rollers removed and the column bases set. These bases were bedded in quick setting cement so that the jacks could be moved onward as soon as possible. The rails and ties were removed, but the concrete mat remains under the old building, being removed only for the construction of the new one.

Purpose of Moving

The main purpose in moving this structure was to make it unnecessary to move equipment and discontinue service, so the business in the building had to continue as usual during the moving period. Gas, water, sewer, and steam heat services were maintained by flexible hose connections with by-pass valves so that additional sections could be installed when necessary. Electrical service was kept up through aerial leads long enough to take care of the movement of the building. The telephone wires were brought in through seven armored submarine-type cables with 200 feet of slack. The elevators continued in operation down to first floor level, making the whole building almost normal in operation. A circular sidewalk was constructed with a moving runway to maintain contact with the street as the building turned around.

With the particular care taken to make the base as smooth and stable as possible and the careful planning of all movement before it was done, it was possible to relocate the building very accurately and with little disturbance of the structure. Plaster cracks were watched diligently and the small number indicated a satisfactory freedom from excessive straining of the frame. The building, a twenty-five year old structure was moved approximately three hundred feet without any appreciable damage at any point. The continuance of an activity such as required in this case was also remarkable, and the whole performance has the right to be ranked as a noteworthy engineering feat of the present day.

Reference: Engineering News-Record, July, 1931.

Color Printing » » » » as an Art

Jonn J. Hager, ch. e., '35

EVEN the casual observer cannot help being impressed with the color which is being used by advertisers at the present time. Color printing by process plates is a comparatively recent development in printing. The first to make use of the gravure printing were the newspapers who used it for three reasons: because the method permitted an artistic reproduction of photographs upon inexpensive paper; second, the large presses yielded quantity production at great speed; third, gravure platemaking offered no greater difficulty comparatively than ordinary letterpress photoengraving. The newspapers adopted gravure printing because the resulting increase in circulation more than offset the additional cost. Advertising people soon were using this as a medium to place their products before the public eye. However, when the rotogravure sections increased their circulation, the newspapers had gained their objective.

Having pioneered gravure printing, they left further developments along artistic lines to commercial engravers and other concerns possessing the skill necessary to continue improvements from where the newspapers left off.

Reproduction of letterpress colorwork by means of process plates with three or four color-separation negatives is perhaps the most popular method now employed of applying color to advertising. Its use has become almost universal because it can reproduce the exact colors present in the copy or merchandise. Every infinitesmal shade is faithfully portrayed in a process reproduction. Nothing is added or omitted. It is an actual reproduction because only the three primary colors, yellow, red, and blue, are used. Since all color is derived from these three colors it is evi-

dent that every degree of color and every tone which is present in the original copy is reproduced reproduced in the printing. Therefore, process reproduction involves no faking of color no unnatural distortions which might burlesque the subject appear in the reproduction. Any effect which is unnatural or appears distorted is not caused by the printing but by the distortions which might have been in the original copy. Most of the intaglio printing, i.e., printing from an engraved metal plate, now offered to advertisers employ half a dozen or more sets of plates for the reproduction of color subjects. Even then the results is far from an exact copy of the original. Faking the color is often necessary and this produces an unnatural blending of hues which proves to be far from adequate.

Success Depends on Etching

The problem of producing a set of process plates lies chiefly in the retouching and etching with the burden of the problem of reproducing the exact tones of the subject resting upon the color etcher. Upon his skillful etching of the plates rests the success or failure of the reproduction. For the reproduction the subject is placed before a camera and three or four color-separation negatives, depending upon whether or not black is to be used, are taken by the photographer. The resulting negatives are turned over to the retoucher for the color correction. This requires considerable skill on the part of the worker. In case any portions of either of the negatives are too light in comparison with the dark tones in the drawing, careful staining with dye serves to darken the negative and thus lighten the tones in the consequent positive. To darken the tones in the positive, portions of the emulsion are scraped away. When this is finished the negatives are corrected for color from the negative side as nearly as is humanly possible.

These corrected negatives are then turned over to the photographer, who makes from them contact positives which in turn become printing negatives, to be used in making the plates. In the etching of the plates comes into play the workman's knowledge of color values and his ability to judge the necessary depth and also to time the etch so that each plate will have the true etched images of the particular color represented in the original copy from which the plates were made.

The plates, however, are not yet ready for printing since a color correction in the plates themselves is now considered. A darker tone is created by rolling up with ink and reetching. Some tones are lightened by burnishing and sanding. These corrections are made by the same specialists who handled the etching. It cannot be stressed too much that the preparation of a set of process plates is not a series of mechanical operations. It requires manual skill plus an artistic appreciation and knowledge of chromatics which reaches its highest expression on the manner in which the colors are reproduced.

In this form of printing the film has practical a uniform thickness in all the tints that enter into the picture, the graduation of light and shade here being obtained by small dots or fine lines in the light tints, and, by making these dots larger or the lines more numerous, middle tones and shadow graduations are produced on the printed sheet of paper.

Method of Printing

In the printing of the plates the plate designed for the yellow is first printed. This is the hardest one to print since the press must be in register. This means that the plate must be so placed that when the succeeding colors are printed they will be exactly above the yellow color. After the yellow has been printed, the red is then printed over the yellow and then the blue over the yellow and red. If black is to be used as is the case on most advertisements, this plate is printed over the other three. The actual printing requires less attention from the pressman than other printing jobs since there is no danger of the impression showing through on the other side of the paper.

In the printing of the section of a newspaper it should be mentioned that the plates are fastened to a cylinder and the paper is fed on from rolls. In other work, however, the plates are on a flat bed and sheet-fed.

The color printing is here to stay; for many purposes it cannot be excelled and from all available indications conditions are favorable for the color printing industry.

References: *Inland Printer, April,* 1931.

Rose Radio Club Show Exhibit

During the show the radio club will operate its amateur radio station, W9NAA. The station is unique in that it is controllable remotely from three different locations—two in Terre Haute and one in the main building of the Institute. It has a power of approximately 100 watts and has communicated with similar amateur stations in the majority of states in the United States and with several foreign countries. During the show the station will operate on 40 meters and be crystal controlled. Opportunity will be given to the public to have messages sent over this station to points anywhere in the United States over fifty miles from the transmitter.

The club will display two five-meter transceivers in intercommunication and also a system by which it is possible to control remotely the operation of several electro-mechanical devices, using only a simple, portable, radio transmitter.

A miniature radio organ, operating on the principle of the variation of tone with magnetic flux, will be shown, as well as many other interesting and educational exhibits pertaining to radio.

THE ROSE TECHNIC

Member Engineering College Magazines Associated

ARTHUR W. HESS ..... *Associate Editor*
RICHARD K. TONER ..... *Editorials Writer*
GORDON L. BURT ..... *Advertising Manager*
JOHN H. KELLER ..... *Circulation Manager*

Assistants

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WARREN S. SENTMAN, EARLE B. BUTLER

PROFESSOR FAUROT, MR. HENRY C. GRAY ..... *Faculty Advisers*
ALLEN G. STIMSON ..... *Alumni Adviser*

The Absent List

College students have for some time championed the cause of more freedom in the exercise of their responsibilities. They have desired to shoulder more and more of the responsibilities that go with getting a college education. The trend has been away from a compulsory system to a system by which the individual could learn to develop a sense of duty and of obligation. One way in which it was desired to obtain this freedom was to have voluntary class attendance, a method by which students would be free to go to classes or stay from them as they chose without their actions endangering their grades.

In 1931 the Rose faculty adopted the policy of granting this privilege of optional class attendance to all those students who had term averages of 88% or better, the idea being to reward in some way those students who made outstanding records. The results of this experiment were encouraging, and in a short time the lower limit was made 85%, that is, to include high B and A students. Again the results were satisfactory.

When the new method of grading was adopted last year, the rule was changed to affect all those who had cumulative averages of 3.10 or better, in other words, to include all those who had an opportunity of graduating with honors or high honors. All this time of course, the number of students on the attendance list was limited. When the faculty again saw that the system was working to the satisfaction of all concerned, it reduced the lower limit to 2.50. Under this ruling almost half of the student body are relieved from compulsory class attendance.

It is interesting to note how the system is working under this latest ruling. The system has been in effect (at the date of writing) just fifteen days. Yet in that time more absences have been incurred than in an entire semester under the older system. Professors are reporting that it takes two or more blanks upon which to record their absences. In other words, the student body by its own actions is showing that it cannot assume the responsibilities given it.

After all, is this not to be expected? There are at Rose students sixteen, seventeen, and eighteen years old who do not have the slightest notion how to manage their own affairs without assistance simply because they have never been educated to this end. There are also many students who with a little supervision could eventually become strong students and competent engineers, yet actually kill their own chances for success by abusing their privileges. The faculty will not (and should not) stand idly by and let these students wreck their careers.

Unless the action of the student body indicates in the next few weeks that it is going to use discretion in the exercise of its privileges, one of two things is likely to be done. Either there will be a return to the system formerly used of exempting only those in the higher brackets who have demonstrated that they can and will exercise this freedom to their own best interests, or a sliding scale will be adopted which will exempt only the student with a rather high average in the freshman year, decreasing the exemption grade required each term as he advances through the sophomore and junior years and requiring in the senior year a relatively low grade to secure the privilege. This second plan would have the commendable feature that it would place responsibility upon the student as he grows older and gives evidence of his ability to assume it.

The day is not far off when all colleges will accept only those students who have stood within the upper quarter (or some such restricted fraction) of their high school class. These students will be more likely to value their education. It then may be possible to adopt such a system as is in force at this time, perhaps permit everyone to attend classes at his own option. Until such a time arrives, certain restrictions will be necessary, and nothing proves this statement better than the actions of the present student body.

Rose on Parade

Once again the lights are ablaze, the machines are whirring, liquids in flasks and retorts are bubbling, all is action—Rose is on parade.

This issue of the Rose Technic is scheduled to appear the day the Rose Show of 1934 opens. We not only wish to welcome our visitors but also the student body to the display of this publication. Too

few of you know how the Technic is actually operated, how it grows from the copy of the individual staff members into the final form in which you receive it. Almost none of you know how the Technic is run as a business organization. Graphs and statistics will be available so that you may see how the financial side of your magazine is conducted.

This is only one of the many exhibits which will portray to the outsider what Rose is and what Rose does. Primarily these exhibits are designed to be educational in so far as they explain what students at Rose are doing. But they are also designed to be entertaining. Entertainment with a purpose is the keynote of the 1934 Rose Show.

This show will prove many things. It will indicate whether or not student management of the show produces the best results. It will show that Rose is not daunted by a reduced enrollment, but is climbing on to greater heights. Above all it will show that Rose is a good college in which to prepare for an honored profession. Invite your friends to the Rose Show!

Honors and Electives

When one carefully examines the point system of grading as it is employed at Rose, it must be admitted that in most instances it is a marked improvement over the system formerly used. In one thing, however, it is distinctly unfair to the student who wants to get as broad an education as possible and yet wants to graduate with as high an average as possible, perhaps even get honors or high honors. Under the present system it is injurious to a student's average if he takes many electives for thus he reduces his chance for scholarships, honors, and the like.

Under the percent system formerly used, one got credit for taking extra work which was actually a help in getting a mark of distinction upon graduating. At the same time the possibility of affecting his average was slight. Most students were able to make a grade in an elective subject equal to, or at most only slightly lower, than their average would have been without it. For example, most 85% students were able to make at least 80% on extra subjects. An A student would not likely fall below an 85%. This would have very little effect on the weighted average. That this was the actual case is shown by the fact that the faculty had forty passing grades that it could give (60-100 inclusive).

Now they are reduced to only four passing grades (1-4 inclusive). It is not at all unlikely that an A student in most subjects may make a B in an elective. The effect on his weighted average in this case is much more marked than before. Since his weighted average is now the only determining factor in awarding honors (the credit point system having been discarded with the old grading system) it is actually a distinct handicap for a student to take on any extra work. Thus the system discourages the taking of electives, many of which are as valuable to the student as the required subjects. The taking of electives should not be discouraged and for this reason the following plan is suggested.

Most students take electives for the value they hope to get out of the subject and not for the grade. This will be especially true under the present system where credit points do not determine honors. Therefore, give only two grades for elective work—a pass or a failure. In either case the grade must not affect the student's average. In other words, let a student's average be figured only on his required work.

Lest the faculty think that this is quibbling over small matters, let it be said that among several freshmen and sophomores (since the upper classmen now in school are not affected by the new system in this regard) this has been a widely discussed subject. It will be of considerable value to a number of students if the school adopted this system or some other that may lead to the same result.

Blue Key

After getting off to a bad start last year, Blue Key has redeemed itself this year by becoming a positive influence on the Rose campus. The members of this organization and, in particular, its officers, are to be complimented on their efforts.

School spirit is not too much in evidence, so when a particular organization devotes itself to the building up of this, it deserves the support of the entire student body. Read their notices on the front bulletin board. Some of the suggestions made there are really worth while. You may not agree with all of them; in that case make constructive criticisms to the proper persons. If you have a suggestion which you believe will benefit Rose, let them hear it; perhaps they can suggest a way of carrying it through.

The recent dance sponsored by the Blue Key was a step in the right direction. Regardless of the fact that it was for the primary purpose of raising money for furnishing a smoking room for the students, the price of the tickets was reasonable. We need more of that type of social life. There is too much of high priced entertainment which only a few can enjoy. We hope other organizations will adopt the policy of holding their functions where all can enjoy them.

St. Patrick's Day

On Saturday, March 17th, St. Patrick will make his annual visit to Rose. In celebration of his visit the Student Council is staging a dance at the Terre Haute House. The first floor and mezzanine floor are reserved for this occasion. Slim Lamar, formerly featured with Herbie Kay, will furnish music for the festivities. The admission price is 40c per person and table reservations are 25c each. Let's extend St. Pat a royal welcome and turn out en masse for the occasion. For table reservation call the A. T. O. house, the Sigma Nu house, or Miss Learnard, Social Hostess, at the Terre Haute House.

Campus Activities

Edited by

Daniel Overholser,

ch, e., '36

The Debate Club

The fourth Annual Invitational Debate Tournament for colleges and universities in the Middle West was held at Manchester College, North Manchester, Indiana, Friday and Saturday, February 23 and 24. The invitations were extended to colleges and universities in the states of Ohio, Indiana, Illinois, Iowa, Kentucky, Michigan, Wisconsin, and Pennsylvania. Nearly one hundred teams took part in the debates, representing thirty-five schools, ranging in size from Big Ten schools to small junior colleges.

The purpose of this tournament was not to pick a champion, but to give each school a maximum number of debates with representative schools from all over the Middle West. This year two teams were sent from Rose. The Rose men debated the question, Resolved: That the present Japanese policy in the Far East should be approved. Each team debated twice on Friday and three times on Saturday. The Rose negative team debated Manchester, Taylor, Anderson, Huntington, and Evansville, winning from all except Anderson. The Rose affirmative team debated Manchester, Anderson, Butler, Evansville, and Wabash, defeating Evansville.

The following men composed the teams: Edd Coons, Warren Sentman, and Harry McGurk for the affirmative; and Ezekiel Hamilton, Richard Toner, and Gordon Burt for the negative. These six men should certainly be commended for the fine work which they have done, for their success has been attained only through much time and effort.

Glee Club

For the past several weeks the glee club, under the direction of Mr. Clyde Bennett and accompanied by Mrs. Bennett, has been a busy organization. On January 14, it gave a program at the First Congregational Church, Terre Haute; on January 28, one at the Centenary Methodist Church, Terre Haute; on February 11, one at the Masonic Temple, Terre Haute; on February 13, one at the Sarah Scott Junior High School, Terre Haute; and on February 22 it presented a program to the Rose student body at an assembly.

The club has twenty-three members and one guest soloist, Miss Dorothy McCullough, a coloratura soprano, from Saline City, Indiana. The club is booked for several programs in the near future.

Camera Club

The Camera Club has announced a photo contest to stir up new interest in the amateur photographers around school. There is a great abundance of very fine material for picture subjects about the campus. Some very useful and valuable prizes have been offered for those who produce the best results. Taking pictures that are good pictures consists of more than just snapping a shutter. It is a hobby that is well worth the time of any embryo engineer, as most every engineer has to supplement his written matter frequently with illustrations in order to convey clearly his ideas. It is often that a photograph will do this better and easier than anything else.

A. S. C. E.

This society has tried several times this year to find the time for some of its meetings so that it could present some moving pictures to its members, but the times at which these fiims might have been obtained conflicted with other student activities; hence none has been shown yet. However, some interesting lectures have been given. Professor R. L. Hutchins has given an illustrated lecture on the subject, "Relocation and Accompanying Development of Trinity River near Dallas, Texas," a subject with which he is well acquainted. Another lecture illustrated with slides was conducted entirely by Messrs. Motz and Morrison.

R. O .T .C.

On February 12, 1934, the following appointments and assignments of cadet officers and non-commissioned officers in the Engineer Battalion, Rose Polytechnic Institute, were announced: Batalion Commander and Staff: Cadet Major and Battalion Commander, J. R. Motz; Cadet Captain and Adjutant, J. Nickel; Cadet First Lieutenant and Supply Officer, A. G. Mor-

rison; Cadet Master Sergeant and Sergeant Major, E. B. Butler. Battalion Color Guard: Cadet Sergeants and Color Bearers, J. J. Hager, B. F. McIntyre; Cadet Corporals and Color Guard, R. R. Laughlin, B. Pearson. Battalion Band: Cadet Sergeant, J. K. Loman; Cadet Corporals, Ford, McKee, Merriman, Mewhinney, Roberts, Spain. Company "A": Cadet Captain and Company Commander, A. L. Yates; Cadet First Lieutenant and Second in Command, J. I. Mason; Cadet First Lieutenants and Platoon Commanders, H. H. Douglas, P. R. Smith; Cadet First Sergeant, H. H. Richardson; Cadet Staff Sergeants, A. W. Hess, A. L. James; Cadet Sergeants, J. F. Hall, E. J. Welsh; Cadet Corporals, E. Denehie (Guidon Bearer), W. R. Creal, L. Duenweg, W. E. Kasameyer, W. S. Sentman; Cadet Lance Corporals, H. B. Taylor, R. Hopewell, F. M. Blair, R. C. Metz. Company "B": Cadet Captain and Company Commander, H. L. McGurk; Cadet First Lieutenant and Second in Command, R. Danner; Cadet First Lieutenants and Platoon Commanders, J. Babillus, R. C. Larsh; Cadet First Sergeant, N. H. Cromwell; Cadet Staff Sergeants, W. S. Pratt, H. Reintjes; Cadet Sergeants, F. H. Richardson, N. B. Trusler; Cadet Corporals, E. Howard (guidon bearer), H. E. Garmong, J. Hufford, W. Moore, J. Walker, J. Campbell; Cadet Lance Corporals, P. D. Bennett, E. B. Leever, J. Whitesell. Company "C" (Outlined): Cadet Captain and Company Commander, N. C. Blair; Cadet First Lieutenants and Platoon Leaders, S. P. Cauley, J. H. Keller; Cadet Corporal and Guidon Bearer, D. Overholser. Company "D" (Outlined): Cadet Captain and Company Commander, G. F. Stark; Cadet First Lieutenants and Platoon Leaders, W. S. Biggs, F. J. Landenberger.

A. S. M. E.

At a recent meeting of this organization Messrs. McGurk and Tuemler presented an illustrated lecture on the subject "High Temperature Insulation." The material and slides used were obtained through the courtesy of the Johns-Manville Corporation. The chief points brought out in this lecture were the upset of the idea that dead air cells are insulators; the relative conductivities of insulating materials such as fire clay brick, red brick, and various new insulating materials all made from a newly discovered substance called *diatomaceous silica*. Many slides were shown which pictured the construction of furnaces and boilers made from bricks of this new insulator.

W 9 N B Z

In 1932 Mr. T. A. Hunter, instructor in physics at Rose, became interested in short wave communication and he obtained his license for that sort of work. He has recently constructed a 200-watt transmitter, which is giving exceptionally good results. This transmitter, using an antenna 258 feet long, has an 1830 kilocycle frequency controlled by crystal. All of the apparatus was constructed here at school, part of it being made by students. It is operated from a 115-volt line and can be used for voice or code transmission. It is capable of two-way communication with other stations in all parts of the world.

During the six weeks preceding the Rose show, Mr. Hunter conducted a series of thirty code lessons over his transmitter. People from twelve states have written to him acknowledging the reception of his broadcasts. These letters have come from Alabama, Illinois, Indiana, Iowa, Louisiana, Michigan, Missouri, North Carolina, New York, Texas, Ohio, and Pennsylvania. Mr. Hunter divides the hour of each code lesson into four fifteen-minute periods. For the benefit of new students he gives the code itself during the first fifteen minutes at a rate of about four words per minute. In the second period he transmits about six or seven words per minute, and he increases this to eight or nine during the third period. He increases his rate during the last period, and during the last five minutes he uses a rate of about eighteen or nineteen words per minute.

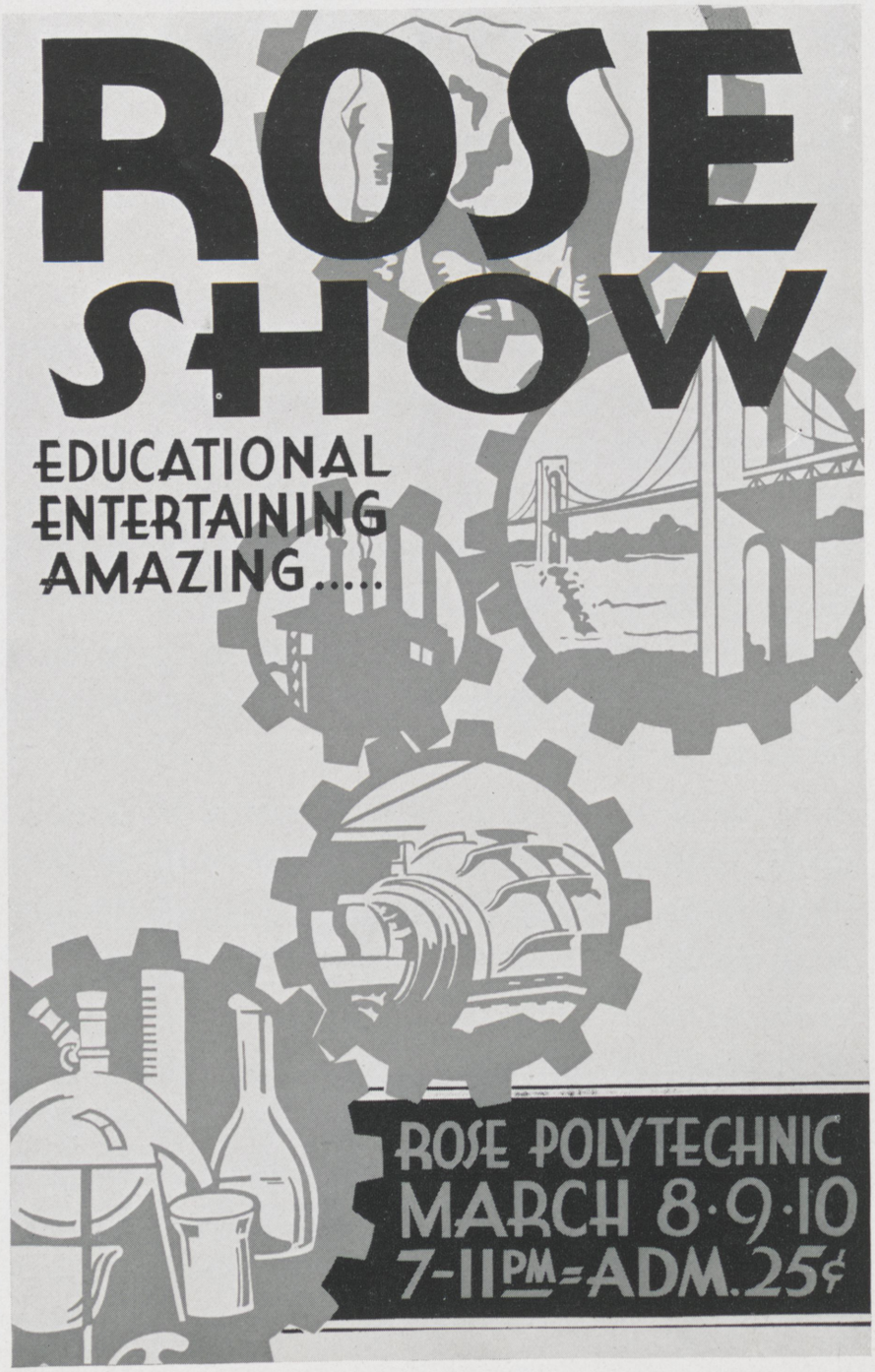
Rifle Club

For several weeks the Rifle Club has been engaging in rifle matches with other colleges over the United States. The team itself is changed from week to week. From one week's shooting the twenty high-point men are taken for the selection of a team of fifteen men for the following week's match. At the end of a match the ten high scores are reported to the competing schools for that week. This is the way in which these rifle matches are conducted. At the end of the season several shoulder-to-shoulder matches are to be held.

During the week of February 19 to 24 a match was held with the Fifth Corps Area; during the week of February 26 to March 3, with the American Society of Military Engineers; and during the week of March 5 to 10 the National Hearst Trophy match, the most outstanding meet of the year, was held. Some of the season's high point men are: McIntyre, Bard, James, Reintjes, Engle, Stark, Pratt, and Campbell.

A. I. E. E.

The Rose branch of the A. I. E. E. is completing plans for the annual tri-school meet to be held sometime this spring. This triangular meeting is a very important part of the activities of the undergraduate members of the A. I. E. E. in this part of the country. It was originally planned to entertain the other two schools, Purdue and the University of Illinois, at the Rose Show, but the unusually early date of the show this year made that idea impracticable. Richard Hornung has been appointed the general chairman of this meeting. The Purdue-Lafayette section of professional members of A. I. E. E. has expressed a desire to participate in this meeting; so there will probably be a large crowd of "ampere chasers" around Rose next spring.



The first glance at a poster advertising the fourth biennial Rose Show may not reveal its true significance. It is far more than a chain of gears enclosing pictures — it symbolizes the Spirit of Rose and the Spirit of the Show. At the top is the elephant, traditional emblem of Rose. It is furnishing a driving force to industry in its various phases—construction, the field of the civil engineer; power transformation, the domain of the mechanical and electrical engineers alike; and research, the realm of the chemical engineer.

The 1934 MODULUS

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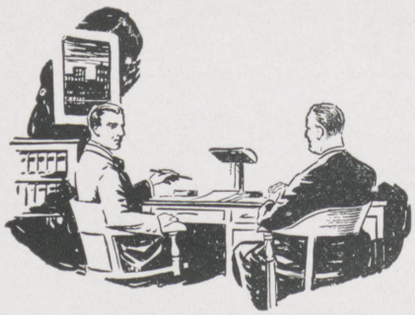
Alumni

Edited by Jay F. Hall, e. '35



Robert Wickersham

Dear Father:

I will try and comply with your request, and give you a summary of my travels about the country in furthering the business interests of our firm.

One of the first trips was to Northern Minnesota in connection with the lumbering business. This trip took me to Duluth, Bemidji, and Crookston, Minnesota, Winnipeg and Rainy River, Canada on the International Border. Most of the saw and planing mills which I visited have now been either destroyed by fire or dismantled, as the timber is pretty well cut over in Northern Minnesota and the surrounding Canadian sections. Practically all of the telephone and telegraph poles used throughout the Central States which formerly came from Northern Minnesota and Michigan are now shipped from the Pacific Coast.

This trip is outstanding in my memory on account of the severe cold weather. The Firm invited my wife to accompany me on this trip, and not being accustomed to this severe weather, we froze the plumbing in our hotel room at Duluth and flooded the room as well as the hallway. The temperature was 42 degrees below zero. I had been led to believe that one would not feel this extremely cold weather. This is not the case, however, when the wind is blowing. I will agree that if the wind is not blowing, you would not feel the cold, but would freeze very readily.

Perhaps the next trip of importance was into the lumbering districts of North Carolina. This trip did not bring about a great deal that would be of interest with the exception, perhaps, of the mountain district in and around Asheville. The only point that seems to be outstanding in my memory is the Grove Park Inn Hotel at Asheville with hammered copper, hand made electric fixtures throughout the hotel, even to the extent of the telephones in the guest rooms. This hotel is very unique in its stone exterior construction, and its very large fireplace in the lobby. On this trip I was obliged to go to Raleigh and Winston Salem, the tobacco manufacturing centers.

Lumbering in the South

Some few months later, the latter part of August, I visited the lumber section of Florida which is on the Gulf side of the State, down below the town of Live Oak in the yellow pine and crocodile swamps. This was my first visit to Florida, and I hope I never have to go into this section of Florida again at that season of the year. The mosquitos were very bad, and while they were so small you could hardly see them, the bite or sting was very poisonous and raised very large welts. The lumbering operations in the South are quite different from those in the North. In this yellow pine and turpentine district, one sees the chain gangs from the penitentiary working on the roads and in the turpentine plants. Most of this timber is cut for export into what is known as dimension stuff—large sizes, 10″x12″, etc. On this trip I visited Jacksonville, as well as St. Augustine which is known as the oldest city in the United States.

I will never forget this trip as long as I live. I left Chicago in an exceedingly bad condition suffering from hay fever. The trip down to Live Oak was almost unbearable, but after about three days I was relieved and had no more hay fever while in the South, but some of the natives were in misery with this malady. This trip will never be forgotten due also to the severe attack of southern fever which I contracted there.

An incident on this trip which stands out vividly in my memory I shall relate as briefly as possible. At Live Oak I called upon the General Manager of the Live Oak, Perry and Gulf Railroad, a small line connecting with the Central of Georgia Railroad, and operating through this lumber district. I had not been in his office very long when a negro porter came in and was removing the waste paper baskets in the office. This porter made some remark to the Manager in a way that was very astonishing to me as I had always seen the negroes in the South very subservient. It made such an impression upon me that I commented to the Manager, which perhaps was not the most diplomatic thing to do, but in any event, he said, "They (the negroes) do not say such things here and get away with it," and immediately started to boil over and the threshing that he gave this negro, finally kicking him out of the door, I will never forget! Several days after this incident, I saw the Manager again, and he told me that the negro had not even returned for his money.

Missouri Zinc Mines

You mentioned the zinc mines in southwestern Missouri. I think you refer to the lead mines in Missouri. I have had very little experience in connection with zinc. However, I do recall having visited a zinc plant at Coffeyville, Kansas. The lead mines in and

about Bonne Terre, Missouri, some 50 miles south of St. Louis are quite extensive. My business, of course, had to do mainly with the concentration mills. There was nothing of special interest in this section of the country with the exception of the razor back pigs running around through the front yards of the miners. I was surprised in going underground to find these lead mines consist of large rooms or caves. One goes down some 500 feet or more and finds large open areas instead of tunnels. These large caverns may be 75 feet or more in height and extend several blocks. The lead ore is disseminated in the rock in pockets.

I recall a study that I made of gypsum mills covering the plants of the U. S. Gypsum Company, perhaps the largest industry of its kind in the world. This work took me to Fort Dodge, Iowa, some sections of Ohio, as well as Alabaster, Michigan, north of Bay City. Also sections of Oklahoma and Texas. This was the trip on which I visited Houston and Galveston. I do not have any special memory of this trip only that it was made in midsummer under severe heat, and the dust from the gypsum mills was very disagreeable especially when perspiring.

This visit to Galveston was shortly after the second tidal wave. The sea wall was then in use, having been constructed some years before. This second tidal wave did a great deal of damage, but did not flood the city. Pavilions, bathing houses, etc. which were constructed outside of the sea wall were demolished.

Large Grain Elevators

During the War I had occasion to go to Port Arthur and Fort William, Canada, in connection with some grain elevators. At that time the Canadian National Railroad elevator having a capacity of some eight million bushels was said to be the largest elevator in the world. Terminal grain elevators of greater capacity have been constructed in recent years, the largest being at Albany, New York, with a capacity under one roof of thirteen million bushels.

I experienced considerable difficulty in getting across the Border. Due to the fact that I was under the draft they would not let me outside of the United States. I telephoned to my local Conscription Board and finally, after considerable conversation between the officers on the Border with the Conscription officials, they allowed me to proceed. Several days later when I attempted to come back into the United States, the Canadian officers absolutely refused to allow me to return. It was with a great deal of difficulty that I was finally able to get out of Canada.

Fire Control in Mines

Shortly after I moved from Chicago to Minneapolis I made another interesting trip which I continued for several consecutive years. This covered the Home-Stake Mining Company's property in and around the Black Hills of South Dakota, some of the properties extending over into Wyoming. As you probably know, this is the largest low grade gold mine in the world, and it is, in my opinion, one of the best mining camps, if not the best, that I have visited. This property, of course, is very active at present due to the increased price of gold and the reduced prices of labor, materials, etc. As a matter of fact, it is at the height of its prosperity. I have been down on one of the lowest levels, 3600 feet below the surface. This mine is of the shaft and tunnel type.

Upon one of my visits to this property. I found the operations completely at a standstill due to a very severe underground fire. Strenuous efforts were made to block off and extinguish the fire but without avail, and it was finally decided to flood the entire underground workings. The damageable machinery, such as motors, was taken out of the mine or moved onto the higher levels and the mine filled with water. As I recall, it took something over six months to flood the underground workings up to the fire levels and then pump the water out. In this connection I might state that no fire or loss of use insurance was carried on the underground property, and the company sustained a loss said to exceed a million dollars.

I have spent considerable time with the coppor mining industry which has taken me to El Paso, Texas, throughout Arizona and New Mexico, as well as sections in Old Mexico. Copper in these localities is mined in both ways, through shaft mining, as well as open pit mining with large electric shovels. The experience in Old Mexico was well worth while, and I was very much surprised to find only a few miles below the border, one can hardly be understood. The Mexicans make no attempt to learn any English, but the Americans all speak some Spanish. It was on this trip into Mexico where I found the trains and all property under guards. This, I believe, was at the time of the bandit Villa's activity, and upon my arrival to Pilares, I found the little mining community very much disturbed. The mining company's store had been robbed by bandits the night before. Business negotiations in connection with this trip took me to Phoenix, Arizona, and Los Angeles and San Francisco, California.

It was while making this trip that I visited the Grand Canyon of Arizona, and I recollect the incident of the school teachers looking through the telescope into the Canyon. On account of the depth of the Canyon, you cannot see the bottom of the gorge with the naked eye, and there are telescopes in observation houses on the rim of the Canyon. I walked up to one of these observation houses and was awaiting my turn to look through the telescope. There were two women just ahead of me whom I decided were school teachers. This one women started to look into the telescope and then dropped it like a hot cake. I immediately peered through the telescope and found it focused on two men at the bottom of the Canyon who had just dismounted from their horses and were relieving themselves.

I have also visited the copper mining sections of Montana—Butte, Anaconda, Helena, Great Falls, etc.

Many trips have been made in the iron ore districts of Minnesota and the northern peninsula of Michigan. I have also traveled a great deal in connection with the coal mining industry in sections of Indiana, Illinois, Wyoming and in the hard coal fields of Pennsylvania and Ohio.

Perhaps the most extensive industry which has taken me about the country in recent years is the flour milling and grain industry. Of course, Minneapolis has been considered the center of the flour milling industry in the United States until recent years, when Minneapolis has had to step aside for Buffalo. Kansas City is also a close contestant, the change coming about on account of the transportation rates.

I recall one trip in connection with some flour mills in Montana which was made in midwinter, and I was snowbound for 36 hours at Columbia Falls, just west of Glacier National Park. It was very tantalizing to see these large rotary snow plows going by keeping the main line tracks open when we were obliged to sit in this station not being able to get some 20 miles down the branch line to Kalispell. There was nothing but a small lunch room at this junction, and some of the women's funds had been exhausted. Several other traveling men and myself took up a collection to purchase food for them.

In connection with our milling and grain business, I have had to make extensive trips to practically all sections of the country including Grand Forks, North Dakota; Great Falls, Montana; Spokane, Pasco, Seattle and Tacoma, Washington; Portland, Oregon; San Francisco, Vallejo and Los Angeles, California; Salt Lake City and Ogden, Utah; Omaha, Nebraska; Wichita and Topeka, Kansas; Kansas City, Missouri; Oklahoma City, Oklahoma; Waco, Texas; Louisville, Kentucky; Indianapolis, Indiana; Buffalo, Ogdensburg and Albany, New York, as well as New York City; Winnipeg, Vancouver, Toronto and Saskatoon, Canada, and many other less important cities.

Many other trips have been necessary in connection with the lumber industry. I have visited numerous lumber milling districts of the Pacific Northwest, including Bend, Oregon; Everett, Washington, and sections of British Columbia. I believe my first visit to Vancouver was in connection with some lumber mills many years ago both on Vancouver Island and the mainland. I was very much impressed with the natural resources on Vancouver Island, and it is rather a surprise to me that they have not been exploited up to date. I took a boat up into the lumber districts of the islands near Prince Rupert.

I have made some very long jumps in connection with the paper milling industry—through many sections of Canada including the Provinces of Quebec, Ontario and British Columbia. I believe the largest single paper milling plant in the country is located at Powell River, British Columbia. You understand there are larger operating companies, but my impression is that this is the largest mill at any one location. Of course, I have visited many paper mills in Minnesota and Wisconsin.

Utility Properties

Some years ago I used to be called upon to visit utility properties such as gas and electric plants which are extensively located throughout the country. We also have many soap factories, some in Canada, as well as packing plants throughout the United States and Canada, including the Armour Company.

You mentioned my visit to Tia Juana and Caliente, Mexico. Tia Juana is just at the border or perhaps a mile across the border and is the old Mexican tourist and liquor town. Caliente is nothing more than a hotel tourist resort with race track, golf course, etc., about three miles beyond Tia Juana. The gambling casino at Caliente is very elaborate, and I will never forget a game of black jack which I saw there to the tune of $500 a hand. Of course, there was no business that took me to these points, but I have always made it a policy when on business trips to see what was to be seen in the immediate vicinity. In this way I have virtually covered all of the points of interest in the United States and Canada, including practically all of the National Parks. I have done some other traveling for pleasure, such as several trips to Southern Florida as well as Cuba.

You will perhaps have noted as I have gone along that these various trips were made at the most unpleasant times of the year. That seems to be the general procedure of the insurance business. We investigate and secure an account in the North, Canada, etc. in the winter, and an account in the South in midsummer. Of course, these trips must be made at the time the contact comes up. We cannot wait; we must strike when the iron is hot.

From the above you will see that I have certainly had my share of traveling, and while it has been an experience well worth while, I am glad to be relieved of it. I still like to take an occasional trip to New York, or the Pacific Coast, but I am very happy to be able to spend most of my time at home.

Here and There With The Grads

'00 Curtis A. Mees is Consulting Engineer with the Geogia Public Service Commission of Atlanta.

'01 G. H. Clay is secretary of the Midwest Region of the American Chemical Society for this year. The meeting will be held in Kansas City on May 3, 4, and 5.

'03 H. E. Wiedemann is chairman of the Midwest Region of the American Chemical Society at the meeting in Kansas City, May 3, 4, and 5.

'16 Richard D. Leitch is acting as advisory engineer to the United States Public Health Service in the Federal CWA project for

sealing abandoned coal mines in ten of the chief coal producing states. A total of $1,519,755. has been allocated for the work.

Within the past year or so, in addition to being listed in "Who's Who in Engineering" Mr. Leitch has "made" "American Men of Science," has been appointed to membership of a committee in the Hydrographic Section of the Geophysical Union of the National Research Council and has been elected Fellow of the American Association for the Advancement of Science.

'27 John B. Wilson is Engineer-Inspector for the Public Works Administration, and his address is 401 D. Federal Building, Indianapolis, Indiana.

'28 Morris Guggenheim is Chief Project Engineer for the CWA work in Jo Daviess County, Illinois. Recently he sent the school a pamphlet of the American Institute of Mining and Metallurgical Engineers, on Ball Milling, of which he is co-author with three other men.

Robert F. Alexander is now in the office of the Chief Engineer, Maintenance of Way of the Pennsylvania Railroad at the Broad Street Station, Philadelphia.

'31 Julius Hulman is Draftsman and Computor for the Federal Land Bank at Louisville, Kentucky.

Marriages

'29 Henry T. Nancrede was married February 10 to Miss Margaret Steppe of Effingham, Illinois. They will live at 111 East 16 Street, Indianapolis.

'31 Lee C. Kelsey, Jr. was married January 23 to Dolores Helen Carroll, in Cincinnati.

Births

'27 William A. Harris and Mrs. Harris announce the birth of a son February 19.

'28 Kenneth Metcalfe and Mrs. Metcalfe announce the birth of a daughter.

SPORTS

Edited by
Harry H. Richardson,
m., '35

Basketball Tournament

Rose finished up its intramural basketball season with a marathon on Saturday, February 24. To complete the season, which was cut short by the Rose Show, Coach Brown planned something new in the Rose Intramural Athletics system. I refrain from terming the day's efforts a tournament because it was not a tournament in the strict sense of the word. Instead of being run on the elimination basis as tournaments are run, this marathon called upon each team to play practically every other team competing. As it was actually done, one team played two games, three teams played three games, and the other two teams played four games. Play was begun at nine o'clock, with games every hour up until twelve, when an hour was allowed for lunch. Then games were resumed at one and continued until five. The final game was played at eight o'clock in the evening. The winner in marathon was to play the winner of the previously scheduled games for a two-out-of-three title series. As it happened, the winner was the team that had won the league title, and therefore, was the undisputed school champions.

Here is the way that the schedule appeared before actual play started:

1—9 A. M., Civil B vs. Electrical
2—10 A. M., Mechanical A vs. Chemical
3—11 A. M., Mechanical B vs. Winner of 1
4—1 P. M., Mechanical B vs. Winner of 2
5—2 P. M., Loser of 1 vs. Loser of 2
6—3 P. M., Winner of 1 vs. Winner of 2
7—4 P. M., Mechanical B vs. Winner of 5
8—8 P. M., Winner of 7 vs. Winner of 6

Here is the schedule as it was played:

9 A. M., Civil B vs. Electrical
10 A. M., Mechanical A vs. Chemical
11 A. M., Mechanical B. vs. Civil B
1 P. M., Mechanical B vs. Mechanical A
2 P. M., Chemical vs. Electrical
3 P. M., Civil B vs. Mechanical A
4 P. M., Mechanical B vs. Electrical
8 P. M., Mechanical B vs. Civil B

The day's play was marked by some very fine basketball, and gives a good indication that Rose will have a more than fair team when they again appear upon the hardwood next year.

Civil vs. Electrical

The first game found the strongest team in the league against a much revamped team from the electrical department. The game was played carefully, but the Electricals found that they could not stop "Red" Richardson and Art Hess, nor could they locate the basket for more than two free throws. The helf found the Civils in a comfortable 10-2 lead. In the second half the Electricals outscored the Civil second team by a slight margin, but it was not nearly enough to close the gap. The final score was 15-8 in favor of the Civils. Lineup and summaries:

CIVIL B — 15

		F.G.	F.T.	P.F.
F.	Butler	0	1	1
F.	Mayrose	1	0	0
F.	Richardson, F. H.	3	0	0
F.	Heck	0	0	1
C.	Hess	2	0	0
C.	Colburn	0	0	1
G.	McEowen	0	0	2
G.	Bard	0	0	0
G.	Eyke	1	0	0
	Totals	7	1	5

ELECTRICAL — 8

		F.G.	F.T.	P.F.
F.	Straw	0	0	1
F.	Wells	0	1	1
C.	Rieck	0	1	1
G.	Presnell	1	1	1
G.	Mewhinney	1	1	0
	Totals	2	4	4

The next game was a very fast and close affair. The Mechanicals had a 5-3 edge at the half due to baskets by Howard and Hufford and a free throw by Kasameyer. Quite a number of fouls were committed and the game could have been won or lost by either team on the making or missing of their foul tosses. Wodicka and Price were the whole show for the losers while Kasameyer contributed seven points to the Mechanical cause. The Chemicals were also outscored in the second half, and lost by a score of 13-8. Lineup and summaries:

MECHANICALS A — 13

		F.G.	F.T.	P.F.
F.	Howard	1	0	1
F.	Kasameyer	2	3	1
F.	Wilson	0	0	0
C.	Laughlin	0	0	0
C.	Leever	0	0	0
G.	Hufford	2	0	2
G.	Spain	0	0	0
G.	Moore	0	0	0
	Totals	5	3	4

WILL YOU BE READY?

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Since 1874 Rose Polytechnic Institute has trained men for Industrial leadership. Well planned courses in Civil, Chemical, Electrical and Mechanical Engineering are offered. For complete information, write to the registrar.

ROSE POLYTECHNIC INSTITUTE

Terre Haute, Indiana

CHEMICAL — 8

		F.G.	F.T.	P.F.
F.	James	0	0	0
F.	Garmong	0	0	2
F.	Walker	0	1	0
F.	Cauley	0	0	0
C.	Hopewell	0	0	0
C.	Utter	0	0	3
G.	Hoffman	0	0	0
G.	Price	0	2	0
G.	Tucker, N.	2	1	1
	Totals	2	4	6

Hess Stars

The Mechanical B's came out to play the Civil B's and found that Art Hess was unbelievably "hot." Hess put away five baskets in the first half to give his teammates a 15-6 lead, and then came back to score six more points in the second half. It was easy to see that it was the first game of the day for the Mechanicals as they seemed to be unable to connect with the iron hoop. If Hess had not been playing, the Mechanicals would have won by one point. As it was, they lost by a 27-12 score. Lineup and summaries:

CIVILS B — 27

		F.G.	F.T.	P.F.
F.	Butler	1	0	0
F.	Heck	1	0	0
F.	Richardson, F. H.	1	1	0
F.	Mayrose	0	0	0
C.	Hess	8	0	0
C.	McEowen	1	0	2
G.	Eyke	0	0	0
G.	Colburn	1	0	0
G.	Bard	0	0	0
	Totals	13	1	2

MECHANICALS B — 12

		F.G.	F.T.	P.F.
F.	Nelson	1	0	1
F.	Engle	1	2	0
F.	Yates	3	0	0
C.	Richardson, H. H.	0	0	0
G.	Fox	0	0	0
G.	Donie	0	0	4
	Totals	5	2	5

The one o'clock game was the first of two very exciting games, both of which were overtime games. This first game, between the Mechanical B's and the Mechanical A's was finally won by the Mechanical B's after an overtime period. The final score was 15-13. The B's enjoyed a 6-4 lead at the half, but that was soon wiped out by the A's. With less than a minute to play the score stood 13-12 in favor of the A's. Nelson was then fouled as he was dribbling and he made the charity toss to tie the score. The B's obtained the ball on the next tip-off and worked the ball down the floor. Just as the close of the game Richardson let go with a shot from the edge of the foul circle that was good, but it did not count as the whistle blew before the ball had left his hands. In the overtime period Nelson arched a beautiful shot from out on the floor that never touched the rim. That was all of the scoring, but it was enough. Lineup and summaries:

MECHANICAL B — 15

		F.G.	F.T.	P.F.
F.	Engle	2	0	0
F.	Nelson	1	1	2
C.	Richardson, H. H.	1	2	3
G.	Fox	1	0	2
G.	Yates	1	0	0
	Totals	6	3	7

MECHANICAL A — 13

		F.G.	F.T.	P.F.
F.	Kasameyer	2	0	0
F.	Wilson	0	0	0
F.	Howard	1	0	0
F.	Moore	0	0	0
C.	Leever	0	0	1
G.	Hufford	1	3	1
G.	Laughlin	0	0	0
G.	Spain	1	0	1
	Totals	5	3	3

Straw Hot

The game at two o'clock found the Electricals and Chemicals fighting desparately to stay in the marathon as, according to the schedule, the team that lost was out of the running. Straw of the Electricals became quite warm in the opening minutes of play and had the Chemicals all balled up with his four field goals. Wodicka of the Chemicals made two baskets, but found that he could not win the game with his own scoring power. The Electricals were leading 12-4 at the half and finally won by a score of 20-7, Wodicka scoring all of the points for the Chemicals. Lineup and summaries:

CHEMICAL — 7

		F.G.	F.T.	P.F.
F.	Tucker, N.	0	0	1
F.	Garmong	0	0	1
F.	Hoffman	0	0	0
C.	Utter	0	0	1
G.	Wodicka	3	1	0
G.	James	0	0	1
	Totals	3	1	4

ELECTRICAL — 20

		F.G.	F.T.	P.F.
F.	Straw	4	0	0
F.	Presnell	1	0	1
F.	Wells	1	1	1
C.	Rieck	2	1	0
G.	McKee	0	0	1
G.	Mewhinney	1	0	2
	Totals	9	2	5

Three o'clock found the Mechanical A's and the Civil B's fighting it out for one of the positions in the final game of the day. The close guarding and sharp shooting of the Civils had the Mechanicals completely outclassed in the first half as the score of 10-2 in favor of the Civils indicates. The Civil second team went in the game for a large part of the second half and dropped only one point of the big lead held after the first halfs play. Ricketts counted six points to lead in scoring. The final score was 18-11. Lineup and summaries:

CIVILS B — 18

		F.G.	F.T.	P.F.
F.	Butler	0	0	2
F.	Mayrose	1	0	1
F.	Richardson, F. H.	0	1	0
F.	Colburn	0	0	1
C.	Hess	1	1	0
C.	Ricketts	3	0	2
G.	Eyke	2	0	0
G.	Bard	0	0	1
G.	McEowen	1	0	0
G.	Heck	0	0	0
	Totals	8	2	7

MECHANICAL A — 11

		F.G.	F.T.	P.F.
F.	Hufford	0	0	0
F.	Howard	1	0	1
F.	Moore	0	1	0
C.	Laughlin	0	0	0
C.	Wilson	0	1	0
G.	Spain	1	0	1
G.	Kasameyer	2	1	1
	Totals	4	3	3

Mechanicals Win Double Overtime Game

The second exciting game of the day came when the Mechanical B's, who were victors in the first overtime contest, beat the Electricals in a double overtime game. The winner of the game was to play the Civil B's in the final game, so the interest was almost doubled. The first half was slow with the Electricals leading at the end by a score of 8-6. The Electricals jumped into

a 14-6 lead, but two baskets by Engle, and a free throw by Nelson and Richardson brought the score up to 14-12. With a little over a minute to play Richardson was fouled and the Electricals called for time out. When play was resumed Richardson missed the foul shot, but recovered the ball before it went up to the other end of the floor and tied the score with a field goal. The game ended with both teams trying desparately to score. In the first overtime period Nelson again hit the basket from outside to put the Mechanicals out in front. However, with less than half a manute to play, Straw connected for the Electricals to tie the score. In the second overtime period Yates scored two baskets in rapid succession, one on a follow-in shot and the other on an out-of-bounds play, to put the Mechanicals in the lead again. Presnell then hit one from way out on the floor to make the score 18-16. With 17 seconds to play, McKee was fouled. McKee missed the foul shot on purpose on the chance that one of his teammates might recover the ball and make a basket, but the Mechanicals recovered off the bankboard and the game was over. Lineup and summaries:

MECHANICAL B — 18

		F.G.	F.T.	P.F.
F.	Nelson	1	1	0
F.	Engle	2	0	0
C.	Richardson, H. H.	2	3	2
G.	Fox	0	0	2
G.	Yates	3	0	0
	Totals	8	4	4

ELECTRICAL — 16

		F.G.	F.T.	P.F.
F.	Straw	3	0	1
F.	Wells	0	0	0
F.	Presnell	2	0	1
C.	Rieck	0	0	1
G.	McKee	2	1	0
G.	Mewhinney	1	1	1
	Totals	8	2	4

Civils Win Final Game

The final game was a one-side affair as far as opinion goes. The Mechanicals had been playing the entire day with the same five men while the Civils had a squad of ten men. However, the game, which was really lopsided in the first half, turned out to be a very good game. In the first half "Red" Richardson became friendly with the basket and scored nine points. Couple this with three baskets by Butler and one each by Hess and Eyke together with the fact that the Civils were guarding exceptionally well, fully explains why they held a 19-3 advantage at the half. In the second half the Mechanicals got together and turned the tables, though not quite so completely as they needed to in order to win the game, and outscored and outplayed the Civils by a score of 10-2. However, the final score is the one that really counts and the Civils won with a count of 21-15. Lineup and summaries:

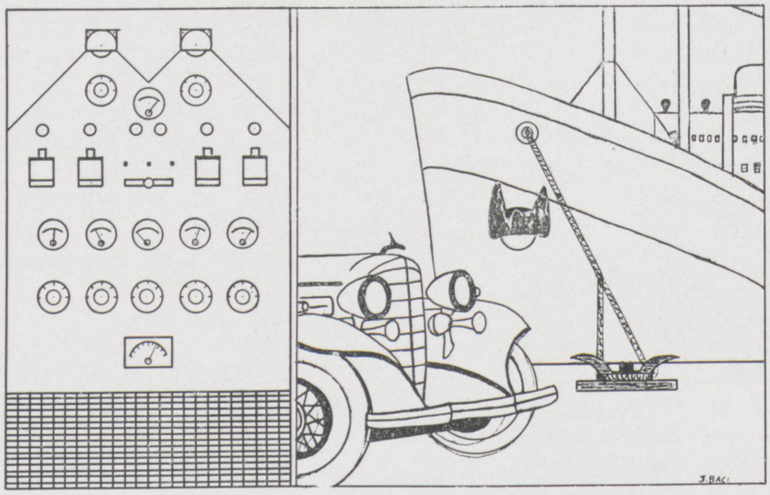
CIVIL B — 21

		F.G.	F.T.	P.F.
F.	Butler	3	0	0
F.	Heck	0	0	0
F.	Richardson, F. H.	4	1	0
F.	Mayrose	0	0	0
C.	Hess	1	0	0
C.	Ricketts	1	0	1
G.	Eyke	1	0	3
G.	Bard	0	0	2
G.	McEowen	0	0	1
G.	Colburn	0	0	0
	Totals	10	1	7

MECHANICAL B — 15

		F.G.	F.T.	P.F.
F.	Nelson	2	3	0
F.	Engle	0	1	0
C.	Richardson, H. H.	2	1	0
G.	Fox	0	0	1
G.	Yates	1	0	0
	Totals	5	5	1

This means that the Civil B's, the same team minus last year's seniors and plus this year's freshmen that won the championship last year, are again the champions of the school. I happened to see in the records of last year's season that the same Civil team beat the same Mechanical team by a score of 22-16 to win the title last year. The Civil B's are nearly all juniors so that it appears they will be good next year.



Research and Progress

Edited by
John A. Ritter, m., '34

Fashion Fads

Bright objects attract us, thus one reason why silk with its shimmering lustrous sheen, is held in higher regard than wool or cotton. Silk being expensive the aid of the scientist was called for and rayon, an artificial silk, was produced. Still the desirable quality of silk, luster, was carried even further in rayon and became a conspicuous feature in denoting the product and unfortunately its cheapness.

Therefore the scientist had to be called in again to take away some of this undesirable luster. It was found that rayon was more transparent than silk, hence it was necessary to find some way to take some of this transparancy away. The method decided on finally as the best was to add emulsified white mineral oil to the solution of rayon material before the fibers were formed. A second method comparably as good was to use a pigment, such as titanium oxide.

It was then found that this lustrous rayon had a much greater demand than the silk itself. Again the scientist had to be called in to remedy the trouble. At first a coating on the fibers was tried but this lost its effect under repeated washings. Finally after a careful study of the silk fiber a clever way of overcoming this difficulty was stumbled on.

Silk fibers are not smooth, but are marked with longitudinal lines of varying length. Microscopic study showed these to be cracks or fissures. When soaked in certain liquids, the fibers swelled. By applying the delusterant to the silk while it was in this swollen condition it was found that a certain amount of it was held in the cracks and the effect was permanent. — *Scientific American, March,* 1934.

Bullet Speeds

Photo-sensitive devices may soon have to themselves the whole field of speed measurements. Already horse races and athletic contests are most accurately timed in this way. Photo-cell speed traps in the roadway paving have given accurate notice of automobile speeding to police further along the road.

Now photronic cells have been used by Army bureaus for timing the speed of bullets from regulation army rifles. The bullets are fired through a series of focussed light beams, each impinging on its photocell. Although the eclipse of each cell lasts only one twenty-thousandth of a second, the indications are unfailing, and bullet velocities as high as 3000 ft. per second can be measured within one foot per second.

Another use of the photocell, although far removed from such things as bullets, is for starting escalators. The thrifty Germans do not have their public escalators operating continuously like those in the United States, which are in motion whether carrying passengers or not. Accordingly a novel use of photo-cells has been made in the new Innsbrucker Platz railway station in Berlin.

Air Brakes

The new Douglas airliners are reported to be the fastest multi-motor passenger carrier ever built. These planes have a speed of 210 miles per hour at 8,000 ft. altitude, and a landing speed of less than 60 miles per hour. Tests have proven that with only one of the 2 motors in operation the plane can take off, fly to an altitude of 9,000 ft. and maintain a speed of almost 120 miles per hour. These planes incorporate many features, among which might be mentioned, Sperry hydraulic-pneumatic pilots for automatic flying and air brakes to reduce the landing speed. Ten automatic pilots keep the plane on a level and straight course in any kind of weather and leave the pilot free for other operations. As to the air brakes, with the demand for more and more speed by passengers on commercial lines, aeronautical engineers were faced with a serious landing problem. Heretofore the faster the plane aloft, the faster the speed with which it must touch the ground on landing. The answer to this problem was the air brakes such as are installed on the new airliners. This air brake, located on the trailing edge of the wing, reduces the landing speed as aforementioned to about 60 miles per hour or less, and in all cases reduces the probable landing speed necessary for a safe landing by two-thirds. This device represents an achievement in aeronautical design and development leading to a safety factor heretofore consid-

ered impossible. These air brakes coupled with the brakes on the wheels which cut down the run necessary after landing are of great importance in the advancement of high speed land airplanes. —*Aviation Feb.*, 1934.

New Terranautics

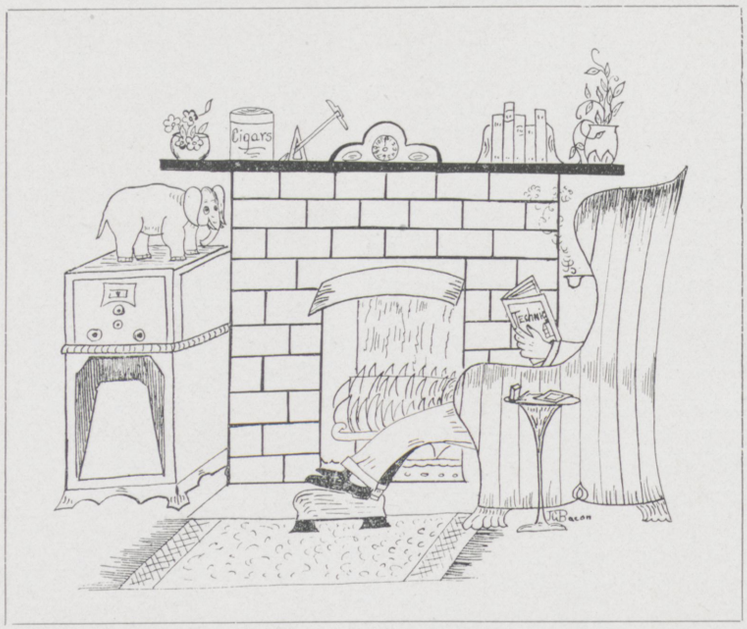
Considerable work has been done lately in the field of automotive design that has a distinct leaning towards aerodynamic streamlining. There are several points which should be mentioned which have been neglected in most discourses.

Certain fundamentals make the streamlining of an automobile an entirely different task from that of an airplane. The first is that in the case of an airplane the air always comes from the front of the aeroplane or so nearly that it can be considered as such. The automobile though is different for the air may come from any direction. Therefore, William B. Stout has rather shocked the gentle readers of his article by stating that the tear-drop streamlining of automobiles which has always been considered the acme of design is faulty.

He is well qualified to write and make such statements since as a designer of motor cars and airplanes, he is able to view the situation from all angles.

His first contention is in that of side wind thrusts on motor cars, with a streamlined, tear-drop body the shape approaches that of an airfoil and a considerable amount of lift will be generated which will tend to throw the car from a straight line. In fact it has been estimated that the streamlined car will be three times as hard to steer in a cross wind as the conventional model. Extreme weight would be needed to keep the car on the road under such conditions. Hence it is essential that the plan view of the motor be designed to give a minimum of side thrust in cross-winds.

Next, streamlining for one speed will not work at another. Certain economical cruising speeds must be chosen and the design based on that speed, an excess of this speed will be less economical as it increases. It has been found that in the case of the old type square cornered model the most economical range was from 35 to 40 miles per hour. With the present day design this has been stepped up to 48 miles per hour. But only after extreme advances have been made, refinement in design to counteract side thrust, will it be possible to raise this so called cruising speed to 60 miles per hour.



Fraternity Notes

Theta Xi

The annual pledge banquet of Kappa chapter of Theta Xi was held on the night of Friday, February 9. The actives and pledges of the chapter were present, along with many of the alumni. The evening will long be remembered as being replete with good cheer and fellowship.

Plans are now under way for a pledge dance, to be held sometime in the near future.

At the present time all actives and pledges of the chapter are working conscientously on projects for the coming Rose Show. Many of them have original ideas in mind which should add tremendously to the interest of the Show.

Kappa chapter is extending an invitation to its alumni to visit the Rose Show. The house will be in readiness to welcome them.

Sigma Nu

A Pledge Banquet was held at the chapter house on the evening of February second for the purpose of giving pins to the new pledges. There were thirty-eight present, including actives and pledges. At a formal service on Sunday, March 9, the following men were pledged to Sigma Nu: James Hatcher, Rol Donie, John Heltsley, Stanley Cox, Sam Tait, Rhiman Rotz, Frank Blount, John Fox, Lawrence Carroll, John Ricketts, Burt Raynes, Bill Batman, George Landenberger, Paul Kristan, and John Jacobson.

Beta Upsilon of Sigma Nu is pleased to announce the initation of Bernard Melton at an initiatory service held at the chapter house on Tuesday, March 6.

A pledge dance was held at the chapter house on Friday evening, March 23. Music was furnished by Bob Liggett and his orchestra.

Alpha Chi Sigma

The members and pledges of Iota have been working hard the last few weeks in order that the 1934 Rose Show may be a complete success. As a contribution to the show, Alpha Chi Sigma is staging a lecture room demonstration in the chemistry department. The preparation for the chemical engineering profession and the contributions of chemical engineers to human welfare will be stressed. Iota is doing its best to make the lecture entertaining as well as educational, and all our friends are invited to visit us on the nights of the show.

In connection with the show, the members of the Indiana University chapter and of the Indianapolis professional chapter, as well as the members of the Terre Haute group, will be the guests of Iota for an all day meeting. Dr. Campbell of the Terre Haute group has arranged and inspection trip through the plant of the Commercial Solvents Corporation for the morning, a conclave meeting will be held in the afternoon, and in the evening our guests will visit the Rose Show.

On February 20, Dr. Stiles of the bacteriological laboratories of the Commercial Solvents Corporation addressed the chapter at the regular professional meeting.

Theta Kappa Nu

Indiana Gamma held its annual pledge ceremony on Sunday afternoon, February 4, 1934, followed by a banquet at which all of the actives and pledges and many of the alumni were present. The feature of the evening was an address given by Leroy A. Wilson, a Rose graduate who is a Theta Kappa Nu alumnus. Mr. Wilson spoke from New York by means of special amplifying equipment of the American Telephone and Telegraph lines.

On February 16, an open house was held; all of the pledges and actives were present. At a meeting on February 21, the following officers were installed for the present term: president, Charles Evinger; treasurer, Richard C. Metz; secretary, E. W. Wilber; oracle, John Whitesell.

The annual pledge dance was held at the chapter house on Friday, February 23. The music was furnished by Critchfield's nine-piece orchestra.

Alpha Tau Omega

The plans for the state dance and banquet of Alpha Tau Omega were completed at a conclave held in Lafayette, Indiana, on February 11. This annual affair is to be held in Indianapolis on April 14, at a hall not yet selected.

The annual dance honoring the new pledges of Alpha Tau Omega was held at the Terre Haute House ballroom, March 3. E. J. Welsh was the social chairman in charge of this dance.

The Mother's Club of Alpha Tau entertained the mothers of the new pledges at a party held at the fraternity house on February 23. Mrs. McKee is the president for the present term.

Indiana Gamma Gamma is pleased to announce the pledging of Norman Cromwell of the class of '35. His two brothers, Clyde and Earl were pledged with the class of '37.

A joint banquet of the Terre Haute Alumni Association and of Indiana Gamma Gammma of Alpha Tau Omega is to be held March 15 in observance of Founder's Day. The fraternity was founded 69 years ago.

Tau Beta Pi

At the assembly exercises on Feb. 22, Indiana Beta Chapter of Tau Beta Pi announced the election and pledging of the following men: from the class of 1934, John A. Moore and James I. Mason; from class of 1935, Arthur W. Hess and Albert V. McEowen.

These men were selected because of their excellence in scholarship, capacity for leadership, and personal integrity, and we are confident that they will maintain the standing of the chapter at the highest level and will bring honor to the school in years to come. Therefore, we extend to them our heartiest congratulations.

Another Rose man received recognition at the same assembly when it was announced that Byron Pearson, c.e. '36 had won the first annual sophomore prize for the greatest increase in his cummulative average between the second and third terms.

Blue Key

On Friday, February 16, the Rose Polytechnic chapter of Blue Key, national honorary fraternity, was host to more than one hundred couples at a dance in the Rose gymnasium. Music for the occasion was furnished by Leo Baxter's archestra; the chaperones were Dr. Prentice and Mrs. Prentice, Dr. Hoel and Mrs. Hoel, and Professor and Mrs. Bloxsome. The decorations included rose and white bunting and blueshaded lights.

The purpose of the dance was two-fold: to provide a dance for all Rose men and their friends, and to start a fund for the establishment of a smoking room in the Main Building of the Institute. All indications were that both aims were attained.

The chapter wishes to express publicly its appreciation to the Institute authorities for the use of the gymnasium, to Mr. Hopkins for the loan of tables and lamps from the dormitory, and to the many students who wholeheartedly supported the dance.

Power Losses

Edited by Nelson B. Trusler, e., '35

Mr. Snittzlebogger was very much surprised one morning to pick up the paper and read the announcement of his own death. He picked up a phone and called his friend Jones.

"Say," he shouted, "Have you seen this announcement about my death?"

"Yes," replied Jones, "Where are you talking from?"

REMINISCENT

In calculus class I sit and ponder,
Weak from loss of sleep;
And while I stare at logs and functions,
I feel that I must weep.

For though I have attended classes,
For one long weary month,
I may as well have dropped the subject.
Oh Hell! I guess I'm sunk.

I wonder why I am required
To take such awful stuff;
And if, by luck, I ever pass it,
I'll quickly yell "Enough."

Now, this is to the freshman studes:
Don't loaf through your math classes.
And if you heed my poor advice,
You'll be the one who passes.

—The Virginia Tech Engineer

May: "Father was very pleased when I told him you were a poet.

Jeffory: "That's fine, does he enjoy poetry."

May: "No, but the last boy friend of mine he tried to throw out was a prize fighter."

PERHAPS YOU'VE HEARD

"You can't get it if you don't put it down."

"If you'll pay attention I'll explain it to you."

(Tap, tap)—"Please answer your names."

"You know why I called on you, don't you Mr. Siegelin?"

"Hmm—hmm, Well, now let's see if we can't figure this out."

"Well, I see I've made the funny sheet again."

"You know and I know that there is a limit to the amount of beer the American people will drink, although we may doubt it at times."

"Is Mr. Templeton absent again?"

"Watch your fingers, men. You've only got five on each hand, and you haven't got any more than you need."

"I yelled so hard Saturday night, that the next morning when I opened my mouth nothing came out."

"Now men, this is a hammer, this is a saw, and this is a chisel."

"Read, read, why don't you read the book?"

"Now, when I was in the industries."

"What have you 'bean' doing?"

"Come in and see me sometime." (when you get some money)

A sensible looking girl is not as sensible as she looks, because a sensible girl has more sense than to look sensible.

—Purdue Engineer.

DIDN'T SUSPECT

"Can your girl keep a secret?"

"Can she? We were as good as married seven weeks before I knew it."

JUST A LITTLE OFF

"Bane any letters for me today?"

"What name please?"

"Ay tank de name be on de letter."

Teacher (answering phone): "You say John Jones has a bad cold and can't come to school today? Who is this speaking?"

Voice (in harsh tone): "This is my father."

—Ga. Tech Yellow Jacket.

A small boy was rushing madly down the street when he ran into a stranger.

"Hey! What's the matter with you?" bawled the stranger. "Think there is a fire?"

"No," the boy panted apologetically, "I'm running home to stop a fight."

"Who is fighting?" asked the stranger.

"Ma and Pa," was the terse reply.

"Say," queried the stranger reflectively, "who is your father, anyway?"

"Humph!" snapped the boy over his shoulder as he scurried down the street, "that's what they're fighting over."

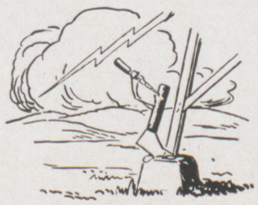
—N. Y. U. Medley.

Advertisement from Reading (Mass.) Chronicle: "Wanted—Small apartment by couple with no children until May 1."

Active: "Gotta match?"
Pledge: "Sure."
Active: "Gimme a cigarette."
Pledge: "Want me to light it for ya?"
Active: "If ya don't mind."
Pledge: "How ya fixed fer spittin'?"

It is reported that someone saw the Brazil bus following John A. Straw and his Clinton taxi out to school the other morning. It seems that the bus driver does this to save gas. He just shuts off his motor and the suction pulls the bus right along behind. How about it, John?

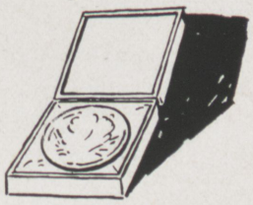
G-E *Campus News*



LIGHTNING SPIES

How many amperes are there in a bolt of lightning? Well, there are too many for comfort, and most of us are willing to let the matter rest there. General Electric engineers, however, were very much interested in knowing, so that they could better protect electric transmission lines and equipment from damage by lightning. And last summer they sent out over 2000 little spies. These spies are metal cartridges, hardly an inch long, which were placed on the legs of transmission towers on lines in Pennsylvania and Virginia. This territory is apparently one of lightning's favorite hangouts. When the surge from a lightning bolt passes through a transmission tower, the little spy is magnetized in proportion to the highest current in the bolt. Linemen carry the magnetized spies back to headquarters, where, when placed in a "surge crest ammeter," they tell their story. Many scores of the little spies have reported, and their stories are really shocking. The highest reading has been 60,000 amperes.

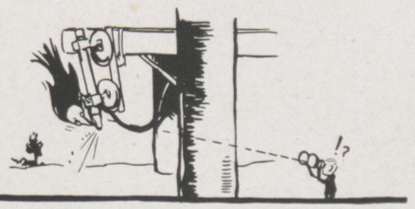
Clifford M. Foust, Carnegie Tech, '21, and Hans P. Kuehni, Ecole Polytechnique Fédérale, Zürich, '20, of our General Engineering Laboratory force, were responsible for the spies and the meter to make them talk.



KEYS, MEDALS, AND RESEARCH

The engineers and scientists of the General Electric Company have individually received many keys of honorary societies, medals, and other tokens. On February 1, however, General Electric received a medal to hang on its collective chest. The donor was the 100-year-old American Institute of the City of New York. And the citation read: "For pioneering in industrial research . . . for great achievements in pure science that have furnished gainful occupation for thousands of workers and that have raised the standard of living, and increased health and happiness."

We mention this with pardonable pride, fully aware, however, that medals and honors are not the purpose of research. The real purpose is the discovery of fundamental facts at the border line of man's knowledge. The practical applications are worked out later. It was with this conviction that Dr. Willis R. Whitney, M.I.T., '90, Ph.D., Leipzig, '96, now vice-president of the company, in charge of research, organized the G-E Research Laboratory in 1900. In maintaining this tradition, he is ably assisted by Dr. W. D. Coolidge, M.I.T., '96, Ph.D., Leipzig, '99, the present director; Dr. Irving Langmuir, Columbia, '03, Ph.D., Göttingen, '06, last year's winner of the Nobel prize in chemistry, associate director; Dr. Saul Dushman, U. of Toronto, '04, Ph.D., '12; and Dr. A. W. Hull, Yale, '05, Ph.D., '09, assistant directors.



SOUTHERN SLEUTHING

Not since Cock Robin have our feathered friends figured in a real good mystery, until the other day. And this was not so much a case of violence as of mistaken identity. Down in South Carolina, a power company had been having a little difficulty. It seems that the cutout fuses, which serve the same purpose on electric distribution lines that fuses do in our homes, were blowing out without apparent reason. Finally, an engineer with a Bird Club in his past unraveled the mystery. He saw a bird pecking at the soft fuse wire, apparently having a fine time. (It wasn't a G-E fuse.) Breathless investigation showed that other circuits had been opened in a like manner.

A G-E salesman on his next call recommended our new fuse links. Having copper in that part which the birds attacked, they proved to be im-peckable, and the trouble ceased. Now the birds are concentrating on worms, the power company on G-E fuse links, and everybody is happy.

NRA MEMBER U.S. WE DO OUR PART

96-32DH

GENERAL ELECTRIC


– somehow
I just like to
give you a light
They Satisfy
Chesterfield
CIGARETTES
LIGGETT & MYERS TOBACCO CO.
Chesterfield
the cigarette that's MILDER • the cigarette that TASTES BETTER
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